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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/421,870	10/26/1999	MARK O. WORTHINGTON	BURST-3-CIP2	4705

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EXAMINER

MORAN, MARJORIE A

ART UNIT PAPER NUMBER

1631

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/421,870

Applicant(s)

WORTHINGTON, MARK O.

Examiner

Marjorie A. Moran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 24 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 10, 13-22, 24-54, 56-62, 67, 69-74, 78-80, 153-203 and 209-211 is/are pending in the application.
- 4a) Of the above claim(s) 13-18, 25, 153-155, 162-177, 187-203 and 209-211 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10, 19-22, 24, 26-54, 56-62, 67, 69-74, 78-80, 156-161 and 178-186 is/are rejected.
- 7) ☒ Claim(s) 178-181 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/28/05</u> | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/24/04 has been entered.

Election/Restrictions

In the response filed 11/13/02, applicant elected a species of optical disc without an analyte or analyte-specific signal element. In the amendment filed 11/24/04, applicant amended the claims to recite an optical disc comprising a plurality of micron-sized chemically reactive features. In view of the original election, these "features" are interpreted to be chemically reactive species which are NOT analyte specific signal elements.

Claims 13-18, 25, 153-155, 162-177, 187-203, 209-211 are again withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and/or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/13/02.

An action on the merits of claims 1-6, 10, 19-22, 24, 26-54, 56-62, 67, 69-74, 78-80, 156-161, 178-186, as they read on an optical disc comprising chemically reactive features which are not an analyte or analyte-specific element, follows. All rejections and objections not reiterated below are hereby withdrawn in view of the claim amendments.

Information Disclosure Statement

The IDS filed 2/28/05 has been considered in full.

Claim Objections

Claims 178-181 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Parent claim 156 limits a cover to be "removably attached" to a disc. Claim 178 limits the cover to be "nonintegral and attachable thereto". As a removable cover is, by definition, nonintegral, and claim 156 already limit the cover to be "attached", claim 178 does not recite any FURTHER limitation of the cover, and is objected to. Claim 179 limits the cover to be "reversibly attached" to the disk. As "removably" and "reversibly" are synonymous in the case of a cover, claim 179 fails to further limit parent claim 156 or 178, and is objected to. Claim 180 limits the cover to be "movably" attached to the disc. As a "removable" cover is inherently "movable", claim 180 is broader in scope than parent claim 156, thus claim 180 fails to further limit a parent claim, and is objected to. Claim 181 limit the cover to be "hingedly" attached. A cover which is attached to a disc by means of a hinge is one which can not be removed from the disc; i.e. the cover may be moved in relation to the disc (up, down, or sideways), but remains attached via the hinge. Thus the cover of claim 181 is limited to be one which is NOT "removably" attached, thus claim 181 does not further limit any parent claim and is objected to.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-6, 10, 19-22, 24, 26-54, 56-62, 67, 69-74, 78-80, 156-161, 178-186 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a NEW MATTER rejection.

An optical disc comprising a micron sized or any other chemically reactive feature, as recited in the amended claims, is new matter. The original claims did not recite a chemically reactive feature of any size. The originally filed specification, on page 5, lines 1-2, discloses that optical discs may have microscopic structures disposed thereon. However, this is a discussion of the background or prior art and is not a disclosure of *applicant's* invention. Further, "microscopic" is not necessarily "micron-sized", nor does page 5 disclose that the "microscopic structures" are chemically reactive. Page 6 of the originally filed specification discloses optical discs comprising analyte-specific signal elements, but does not disclose "chemically reactive features". Pages 15-18 describe Figures which exemplify optical discs comprising analyte specific signal elements, specifically human-IgG-specific analytes and nucleic acid-based analytes. The Figure descriptions do not describe any optical discs comprising chemically reactive features which are NOT analytes or analyte-specific signal elements. Pages 48-49 disclose testing of an optical disc comprising micron-sized nonoperational structures; however, lines 19-32 indicate that all of the nonoperational structures exemplified are analyte-specific; e.g. immunoglobulins or nucleic acids. The specification does not disclose a "chemically reactive feature" which is not an analyte or analyte-specific element anywhere. In the response filed 11/24/04, applicant does not point to support in the originally filed disclosure for the amendments to the claims. As applicant does not point to support, by

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page and line number, or specific Figure element, for the amendments, and none is apparent, as set forth above, the claims recite new matter and are rejected.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 57 and 180-181 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 57 limits features to be disposed between a reflective layer "or of said semireflective layer" which is nonsensical. It is unclear whether applicant intends the features to be disposed between the semireflective layer and the reflective layer, or intends the features to be between OR ABOVE (i.e. "or of" is a typographical error) the recited layers, or intends the features to be between the reflective layer OR the semireflective layer and some other layer of the optical disc, or intends some other limitation of the layers, therefore the claim is indefinite. For purposes of applying the prior art, claim 57 is interpreted to limit the features to be disposed between either a reflective layer or a semireflective layer and some other layer on the optical disc.

Claim 180 limits a "removable" cover to be a "movable" one. As a "removable" cover is inherently "movable", claim 180 is broader in scope than parent claim 156. It is unclear if applicant intends to limit the cover to be "movable" in some way different than "removable" therefore claim 180 is indefinite.

Claim 181 limits a cover to be "hingedly" attached to a disc; however, parent claim 156 limits a cover to be "removably attached". A cover which is attached to a disc by means of a

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hinge is one which can not be removed from the disc; i.e. the cover may be moved in relation to the disc (up, down, or sideways), but remains attached via the hinge. Thus the cover of claim 181 is limited to be one which is NOT "removably" attached, and it is unclear what limitation of the cover applicant intends, therefore claim 181 is indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 5, 10, 19-22, 26-29, 34-36, 38, 47-48, 61-62, 67, 70-71 are rejected under 35 U.S.C. 102(e) as being anticipated by DEMERS (US 2002/0058242, filed 12/20/1996).

DEMERS teaches a CD readable by a laser (i.e. an optical disc) and a method of making such a CD, wherein the CD comprises multiple layers including a reflective layer, and a layer which contains an array (pattern) of reactive chemical groups disposed on a surface (para. 12, 16, and 18). DEMERS teaches that his synthesis sites are 10-20 microns (para. 14), and teaches that another layer may be an information layer comprising an operational structure (para. 20-21) wherein all layers are readable by the same laser (para. 21), thus claims 1, 10, 19-22, 26-29, and 67 are anticipated. As the surface upon which the chemically reactive groups of DEMERS are disposed is inherently opposite, or most distal to the other side/surface of the disc, DEMERS anticipates claim 3. DEMERS teaches that his optical disc may comprise an

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additional protective layer (para. 18), which when present, would be an additional surface "most proximal" to the layer comprising his chemically reactive groups, thus claims 5 and 48 are anticipated. Where the protective layer lies between a reflective layer and a synthesis layer (para 18), claim 34 is anticipated. DEMERS teaches that his CD structure may comprise a cover sealed to the disc (para 30), thus anticipating claims 38, 48, and 70. DEMERS teaches that his attached chemicals may be detected by holographic means (para 51), thus anticipating claims 35-36. DEMERS teaches reading or scanning his discs with a laser (para 21 and 23), thus inherently teaching an optical disc reader, and anticipating claims 61-62 and 71. DEMERS teaches that his CD's are "standard" size and may be 1-12 inches (25-305 mm, para 14) in diameter, thus claim 47 is anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6, 10, 19-22, 24, 26-39, 47-48, 61-62, 67, 69-74, 78-80, 156-161, 186 are rejected under 35 U.S.C. 103(a) as being unpatentable over DEMERS (US 2002/0058242, filed 12/20/1996) as applied to claims 1, 3, 5, 10, 19-22, 26-29, 34-36, 38, 47-48, 61-62, 67, 70-71 above, in view of DECUSATIS et al. (US 5,872,723).

DEMERS teaches an optical disc comprising multiple layers and chemically reactive species disposed on at least one layer, as set forth above. DEMERS teaches that his optical discs may comprise annular rings and/or "pits" (para 13) similar to those found on CD's known in the art, but does not specifically teach forward images in positive or negative relief, nor a wobble groove. DEMERS further teaches detection or "reading" of his optical discs in a plurality of methods similar to those known in the prior art (para's 49-51), but does not specifically teach the particular signals recited in the instant claims.

DECUSATIS teaches optical discs comprising a plurality of layers, wherein the discs may comprise a pattern in either positive or negative relief (col. 10, lines 42-63), comprise wobble grooves (col. 4, lines 1-21) and wherein information may be "read" as a amplitude variation and/or error in a high density signal (col's 19-23), and as set forth in previous office actions.

It would have been obvious to one of ordinary skill in the art at the time of invention to have incorporated the relief, wobble grooves and method of reading an optical disc of DECUSTAIS in the optical discs and method of DEMERS where the motivation would have been to provide precise positioning of information on the disc, and to provide superb precision and control while reading the disc information, as taught by DECUSATIS (col. 13, lines 52-68).

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Claims 49-54 and 56-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over DEMERS (US 2002/0058242, filed 12/20/1996) in view of DECUSATIS et al. (US 5,872,723) as applied to claims 1-6, 10, 19-22, 24, 26-39, 47-48, 61-62, 67, 69-74, 78-80, 156-161, 186 above, and further in view of MORIYA (IDS ref: US 5,878,018, filed 12/22/1995).

DEMERS and DECUSATIS teach and make obvious an optical disc comprising multiple layers and chemically reactive species disposed on or between the layers, as set forth above. DEMERS and DECUSATIS do not teach multiple reflective layers, nor, specifically, a semireflective layer.

MORIYA teaches an optical disc similar to that of DEMERS and DECUSATIS comprising a reflective layer and a semireflective layer, wherein information surfaces are disposed between each reflective layer and a substrate layer (Fig's 1 and 3 and col. 4, lines 14-56).

It would have been obvious to one of ordinary skill in the art at the time of invention to have included the semireflective layer of MORIYA on the disc of DEMERS and DECUSATIS where the motivation would have been to construct a double-layered disc similar to that of DECUSATIS such that double the information can be reproduced, stored and read, as taught by MORIYA (col. 15, lines 61-66). It is noted that MORIYA provides support that the thickness of a "standard" CD is about 1.2 mm (col. 1, lines 27-35) and that MORIYA's disc is made to conform to the "standard" size (col. 2, lines 40-55 and col. 3, lines 20-22).

Claims 38-41, 43-46, 156, 158, 160, 178-179 and 182-185 are rejected under 35 U.S.C. 103(a) as being unpatentable over DEMERS (US 2002/0058242, filed 12/20/1996) as applied to claims 1, 3, 5, 10, 19-22, 26-29, 34-36, 38, 47-48, 61-62, 67, 70-71 above, in view of NEUNER (WO 9705609).

DEMERS teaches an optical disc comprising multiple layers and chemically reactive species disposed on at least one layer, as set forth above. DEMERS teaches that his optical disc may comprise a protective cover through which a laser may be focused, as set forth above, but does not teach a cover which is removable and made of plastic, specifically polycarbonate or polystyrene.

NEUNER teaches a removable protective cover for an optical disc which is made of polycarbonate or other "suitable" material, and aids in focusing light on the disc (p. 6, line 12- page 8, line 14).

It would have been obvious to one of ordinary skill in the art at the time of invention to have used a removable cover made of polycarbonate or other suitable material, such as polystyrene, similar to that of NEUNER, as the protective cover on the disc of DEMERS where the motivation would have been to use a cover which can be aligned to the disc so the cover does not block light transmission to the disc itself, as taught by NEUNER (abstract).

Claims 157, 159, and 161 are rejected under 35 U.S.C. 103(a) as being unpatentable over DEMERS (US 2002/0058242, filed 12/20/1996) in view of NEUNER (WO 9705609) as applied to claims 1, 3, 5, 10, 19-22, 26-29, 34-36, 38-41, 43-48, 61-62, 67, 70-71, 156, 158, 160, 178-179 and 182-185 above, and further in view of DECUSATIS et al. (US 5,872,723).

DEMERS and NEUNER teach and make obvious an optical disc comprising multiple layers and chemically reactive species disposed on at least one layer, and comprising a cover, as set forth above. DEMERS teaches that his optical discs may comprise annular rings and/or "pits" (para 13) similar to those found on CD's known in the art, but does not specifically teach forward images in positive or negative relief, nor a wobble groove. DEMERS further teaches detection or "reading" of his optical discs in a plurality of methods similar to those known in the

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prior art (para's 49-51), but does not specifically teach the particular signals recited in the instant claims.

DECUSATIS teaches optical discs comprising a plurality of layers, wherein the discs may comprise a pattern in either positive or negative relief (col. 10, lines 42-63), comprise wobble grooves (col. 4, lines 1-21) and wherein information may be "read" as a amplitude variation and/or error in a high density signal (col's 19-23), and as set forth in previous office actions.

It would have been obvious to one of ordinary skill in the art at the time of invention to have incorporated the relief, wobble grooves and method of reading an optical disc of DECUSATIS in the optical discs and method of DEMERS and NEUNER, where the motivation would have been to provide precise positioning of information on the disc, and to provide superb precision and control while reading the disc information, as taught by DECUSATIS (col. 13, lines 52-68).

Conclusion

No claims are allowed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: REMACLE et al. (US 2002/0177144, filed 12/30/1997)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marjorie A. Moran whose telephone number is (571) 272-0720. The examiner can normally be reached on Mon,Wed: 7-1:30; Tue,Thur: 7:30-6; Fri 7-3:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on (571)272-0718. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marjorie A. Moran
Primary Examiner
Art Unit 1631

Marjorie A. Moran
5/26/05